

E COMMERCE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

SREE CHAITHANYA COLLEGE OF ENGINEERING

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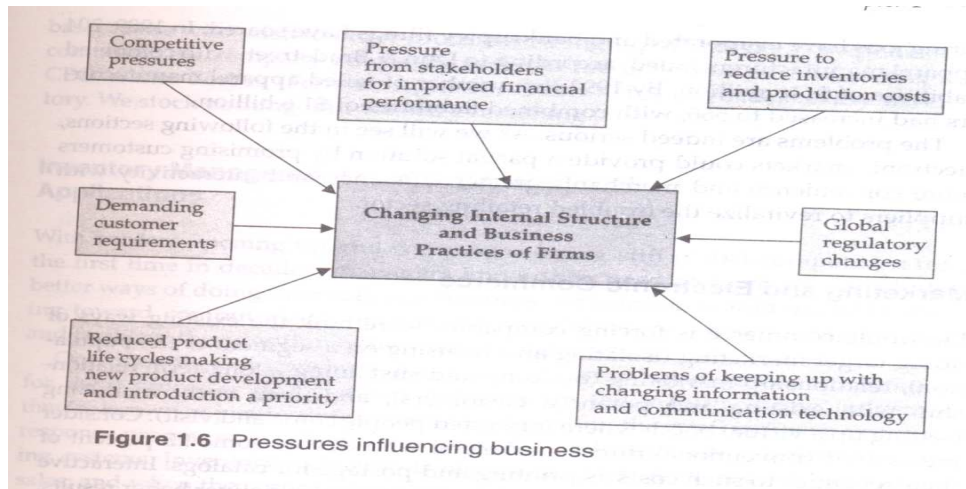
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E-Commerce and the retail Industry

1. Conditions are changing in the “new economy” with respect to the retail industry
2. Consumers are demanding lower prices, better quality, a large selection of in-season goods.
3. Retailers are filling their order by slashing back-office costs, reducing profit margins, reducing cycle times, buying more wisely and making huge investments in technology
4. Retailers are in the immediate line of fire and were first to bear the brunt of cost cutting

Marketing and E-Commerce

1. E-commerce is forcing companies to rethink the existing ways of doing target marketing and event marketing
2. Interactive marketing is in electronic markets via interactive multimedia catalogs
3. Users find moving images more appealing than still image and listening more appealing than reading text on a screen
4. Consumer information services are a new type of catalog business

Inventory Management and Organizational Applications

1. With borders opening up and companies facing stiff global competition
2. Adaptation would include moving to computerized, “paperless” operations to reduce
3. Once targeted business process is inventory management, solutions for these processes go by different names
4. In manufacturing industry they’re known as just-in-time inventory systems, in the retail as quick response programs, and in transportation industry as consignment tracking systems

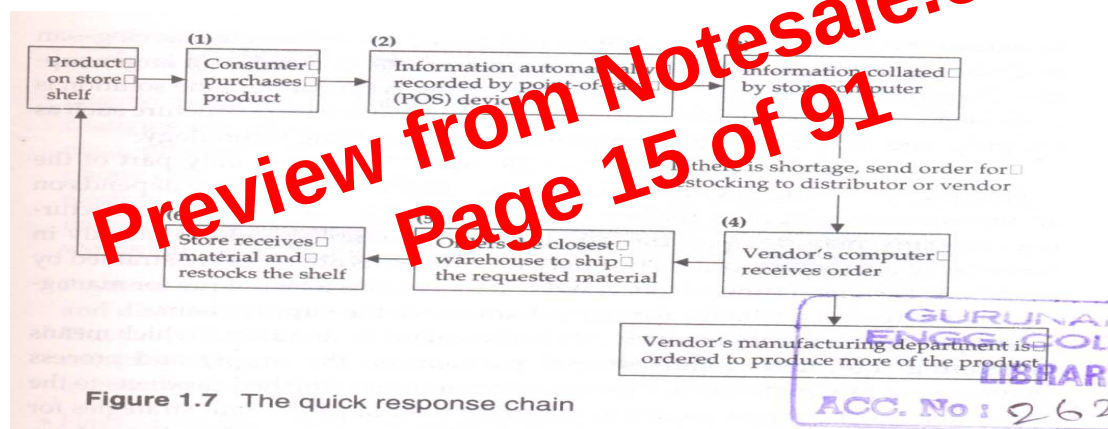
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Just-in-Time (JIT) Manufacturing

1. It is viewed as an integrated management system consisting of a number of different management practices dependent on the characteristics of specific plants
2. The first principle is elimination of all waste (time, materials, labour & equipment)
3. The following management practices are focused factory, reduced set-up times, group technology, total productive maintenance, multifunction employees, uniform workloads, IT purchasing, kanban total quality control & quality circles

Quick Response Retailing (QR)

1. It is a version of JIT purchasing tailored for retailing
2. To reduce the risk of being out of stock, retailers are implementing QR systems
3. It provides for a flexible response to product ordering and lowers costly inventory levels
4. QR retailing focuses on market responsiveness while maintaining low levels of stocks
5. It creates a closed loop consisting of retailer, vendor, & consumer chain, & as consumers make purchases the vendor orders new deliveries from the retailer through its computer network



Supply Chain Management

1. QR and JIT address only part of the overall picture
2. Supply Chain Management (SCM) is also called “extending”, which means integrating the internal and external partners on the supply and process chains to get raw materials to the manufacturer and finished products to the consumer
3. It includes following functions
 - Supplier management: The goal is to reduce the number of suppliers and get them to partners

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Unit- II

CONSUMER-ORIENTED APPLICATIONS

- The wide range of applications envisioned for the consumer marketplace can be broadly classified into:
 - (i) Entertainment
 - (ii) Financial Services and Information
 - (iii) Essential Services
 - (iv) Education and Training

Consumer Life-Style Needs

- Entertainment
- Financial Services and Financial news.
- Essential Services remote diagnostics.
- Education and Training conferencing, on-line databases.

Complementary Multimedia Services

- Movies on demand, video cataloging, interactive Ads, Multi-user games, on-line discussions.
- Home Banking, Financial services, Information,
- Home Shopping, Electronic Catalogs, telemedicine,
- Interactive education, multiuser games, video

1. Personal Finance and Home Banking Management

- (i) Basic Services
- (ii) Intermediate Services
- (iii) Advanced services

2. Home Shopping

- (i) Television-Based Shopping
- (ii) Catalog-Based Shopping

3. Home Entertainment

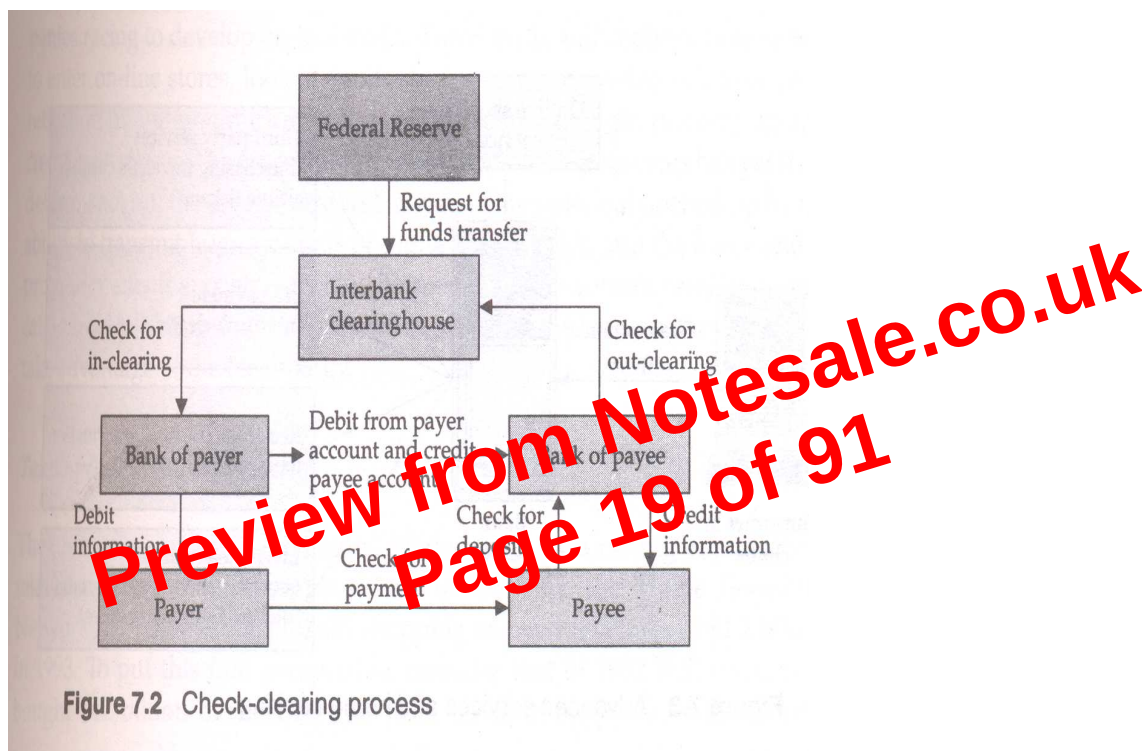
- (i) Size of the Home Entertainment Market
- (ii) Impact of the Home Entertainment on Traditional Industries

4. Micro transactions of Information

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(ii) Intermediate Services

- The problem with home banking in 1980 is, it is expensive service that requires a PC, a modem and special software
- As the equipment becomes less expensive and as bank offers broader services, home banking develop into a comprehensive package that could even include as insurance entertainment
- Consider the computerized on-line bill-payment system
- It never forgets to record a payment and keeps track of user account number, name, amount and the date and we used to instruct with payment instructions. See in Fig;



(iii) Advanced Services

- The goal of advanced series is to offer their on-line customers a complete portfolio of life, home, and auto insurance along with mutual funds, pension plans, home financing, and other financial products
- The Figure explains the range of services that may well be offered by banks in future
- The services range from on-line shopping to real-time financial information from anywhere in the world
- In short, home banking allows consumers to avoid long lines and gives flexibility

2. Home Shopping:

- It is already in wide use.
- This enable a customer to do online shopping

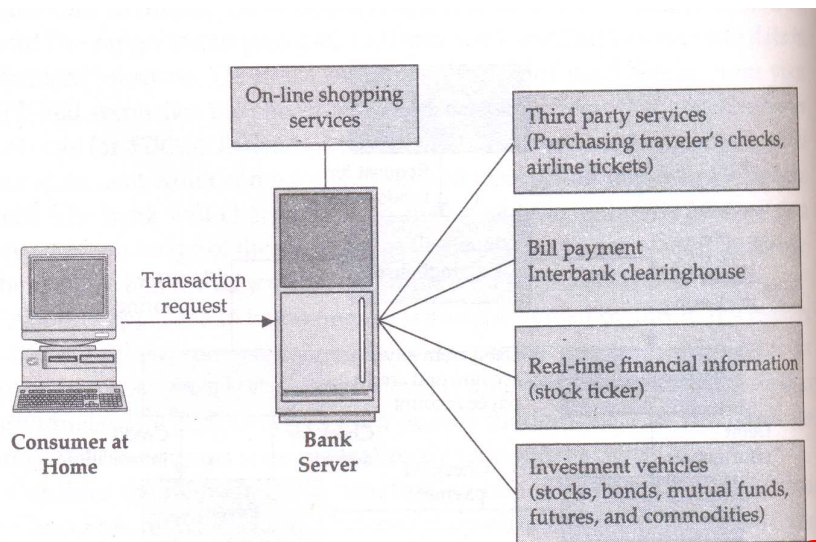


Figure 7.3 Advanced services and home banking

(i) Television-Based Shopping.

- It is launched in 1977 by the Home Shopping Network (HSN).
- It provides a variety of goods ranging from collectibles, clothing, small electronics, house wares, jewelry, and computers.
- When HSN started in Florida in 1977, it mainly sold factory overruns and discontinued items
- It works as, the customer uses her remote control at shop different channels with touch of button. At this time, cable shopping channels are not truly interactive

(ii) Catalog-Based Shopping

- In this the customer identifies the various catalogs that fit certain parameters such as safety, price, and quality
- The on-line catalog business consists of brochures , CD-ROM catalogs, and on-line interactive catalogs
- Currently, we are using the electronic brochures

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- Opportunity for independent evaluations and for customer dialogue and discussion: Users not only buy and sell products, they compare notes on who has the best products and whose prices are outrageous
- Negotiation and bargaining: Buyers and sellers need to be able to haggle over conditions of mutual satisfaction, money, terms & conditions, delivery dates & evaluation criteria
- New products and services: Electronic marketplace is only support full information about new services
- Seamless interface: The trading is having pieces work together so that information can flow seamlessly
- Resource for disgruntled buyers: It provide for resolving disagreements by returning the product.

Mercantile Process models

- Mercantile processes define interaction models between consumers and merchants for on-line commerce

Mercantile Models from the Consumer's Perspective

(i) Pre purchase preparation: The pre purchase preparation phase include search and discovery for a set of products to meet customer requirements

(a) The consumer information search process

(b) The Organizational search process.

(c) Consumer search experiences

(d) Information brokers & brokerages.

(ii) Purchase consummation: The purchase consummation phase include mercantile protocols

(a) Mercantile process using digital cash.

(b) Mercantile transaction using credit cards.

(c) Costs of electronic purchasing.

(iii) Post purchase interaction: The post purchase interaction phase includes customer service & support

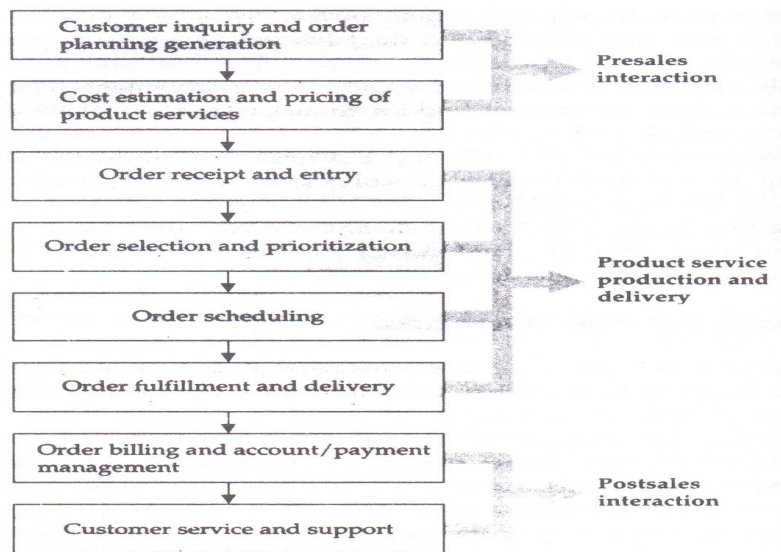


Figure 7.6 Order management cycle in e-commerce

Order planning & order Generation

- Order planning leads to order generation.
- Orders are generated in a no. of ways in the e-commerce environment.
- The sales force broadcasts ads (direct marketing), sends personalized e-mail to customers (cold calls), or creates a WWW page.

Cost Estimation & pricing

- Pricing is the bridge between customer needs & company capabilities.
- Pricing at the individual order level depends on understanding the value to the customer that is generated by each order, evaluating the cost of filling each order; & instituting a system that enables the company to price each order based on its value & cost

Order Receipt & Entry

- After an acceptable price Quote, the customer enters the order receipt & entry phase of OMC.
- This was under the purview of departments variously titled customer service, order entry, the inside sales desk, or customer liaison.

Order Selection & Prioritization

- Customer service representatives are also often responsible for choosing which orders to accept and which to decline.
- Not, all customers' orders are created equal; some are better for the business.

Unit- III

Types of Electronic Payment Systems

- Electronic payment systems are proliferating in banking, retail, health care, on-line markets, and even government—in fact, anywhere money needs to change hands.
- Organizations are motivated by the need to deliver products and services more cost effectively and to provide a higher quality of service to customers.
- The emerging electronic payment technology labeled electronic funds transfer (EFT).
- EFT is defined as “any transfer of funds initiated through an electronic terminal, telephonic instrument, or computer or magnetic tape so as to order, instruct, or authorize a financial institution

EFT can be segmented into three broad categories:

- Banking and financial payments
 - Large-scale or wholesale payments (e.g., bank-to-bank transfer)
 - Small-scale or retail payments (e.g., automated teller machines)
 - Home banking (e.g., bill payment)
- Retailing payments
 - Credit Cards (e.g., VISA or MasterCard)
 - Private label credit/debit cards (e.g., J.C. Penney Card)
 - Charge Cards (e.g., American Express)
- On-line electronic commerce payments
 - 1. Token-based payment systems
 - Electronic cash (e.g., DigiCash)
 - Electronic checks (e.g., NetCheque)
 - Smart cards or debit cards (e.g., Mondex Electronic Currency Card))
 - 2. Credit card-based payments systems
 - Encrypted Credit Cards (e.g., World Wide Web form-based encryption)
 - Third-party authorization numbers (e.g., First Virtual)

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1) Digital Token-Based Electronic Payment Systems

Electronic tokens are three types:

1. Cash or Real-time

- Transactions are settled with exchange of electronic currency.
- Ex: on-line currency exchange is electronic cash (e-cash).

2. Debit or Prepaid

- Users pay in advance for the privilege of getting information.
- Ex: prepaid payment mechanisms are stored in smart cards and electronic purses that store electronic money.

3. Credit or Postpaid

- The server authenticates the customers and verifies with the bank that funds are adequate before purchase.
- Ex: postpaid mechanisms are *credit/debit cards* and *electronic checks*.

Properties of Electronic Cash:

- There are many ways that exist for implementing an e-cash system, all must incorporate a few common features.
- Specifically, e-cash must have the following four properties:

1. Monetary value
2. Interoperability
3. Retrievability
4. Security

Electronic Cash in Action

- Electronic Cash is based on cryptographic systems called “digital signatures”.
- This method involves a pair of numeric keys: one for locking (encoding) and the other for unlocking (decoding). (Through public key and private key).

Purchasing E-cash from Currency Servers

The purchase of e-cash from an on-line currency server (or bank) involves two steps:

- Establishment of an account and

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- If digital signatures are to replace handwritten signatures, they must have the same legal status as handwritten signatures.
- It provides a means for a third party to verify that notarized object is authentic.

EDI & Electronic Commerce

- New types of EDI are traditional EDI & open EDI

Traditional EDI

- It replaces the paper forms with almost strict one-to-one mappings between parts of a paper form to fields of electronic forms called transaction sets.
- It covers two basic business areas:
 1. Trade data Interchange (TDI) encompasses transactions such as purchase orders, invoice & acknowledgements.
 2. Electronic Funds Transfer (EFT) is the automatic transfer of funds among banks & other organizations
- It is divided into 2 camps: old EDI & new EDI.
- Old EDI is a term created by those working on the next generation of EDI standards in order to differentiate between the present & the future.

Old EDI

- Automating the exchange of information pertinent to business activity
- It is referred as the current EDI standardization process where it allows every company to choose its own, unique, proprietary version

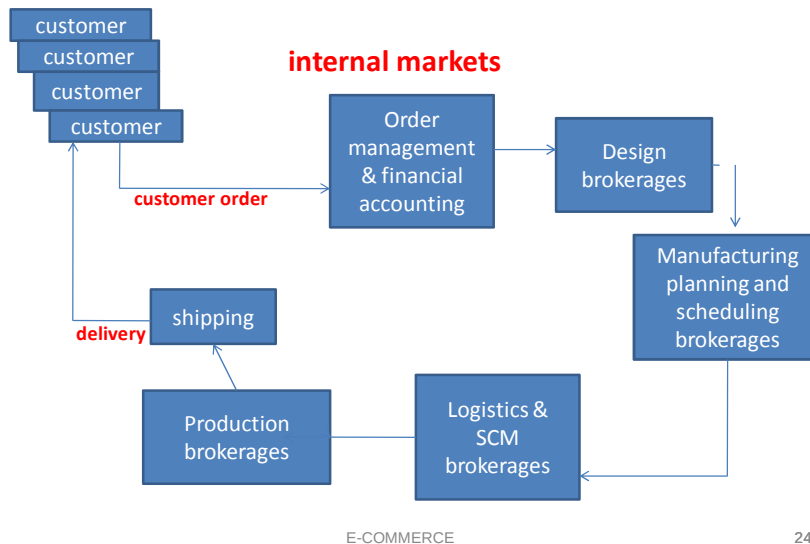
New EDI

- It is refocusing of the standardization process.
- In this, the structure of the interchanges is determined by the programmer who writes a program.
- It removes long standardization process.

Open EDI

- It is a business procedure that enables e-commerce to occur between organizations where the interaction is of short duration.
- It is process of doing EDI without the upfront trading partner agreement that is currently signed by the trading partners

Types of electronic brokerages in internal markets:



WORK FLOW AUTOMATION AND COORDINATION

- In last decade, a vision of speeding up or automating certain business tasks has come to be known as “work-flow automation.”
- This vision has its roots in the invention of the assembly line and the application of Taylor's scientific management principles.
- Today a similar trend is emerging in the automation of knowledge-based business processes called work-flow automation.
- The goal of work-flow automation is to offer more timely, cost-effective, and integrated ways to make decisions.
- Typically, work-flows are decomposed into steps or tasks, which are task oriented.
- Work-flows can be simple or complex.
- Simple work-flows typically involve one or two steps or tasks.
- Another way of looking at work-flow is to determine the amount of cross-functional activity.
- In other words, companies must adopt an integrated process view of all the business elements
- Organizational integration is extremely complex and typically involves three steps
- Improving existing processes by utilizing technology where appropriate.

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- Example of Apple's Apple Search software. Mail filters can be installed by the user, either as separate programs (see links below), or as part of their e-mail program (*e-mail client*).
- In e-mail programs, users can make personal, "manual" filters that then automatically filter mail according to the chosen criteria.
- Most e-mail programs now also have an automatic spam filtering function.
- Internet service providers can also install mail filters in their mail transfer agents as a service to all of their customers. Corporations often use them to protect their employees and their information technology assets.

News-filtering agents:

- These deliver real-time on-line news.
- Users can indicate topics of interest, and the agent will alert them to news stories on those topics as they appear on the newswire.
- Users can also create personalized news clipping reports by selecting from news services.
- Consumers can retrieve their news from through the delivery channel of their choice like fax, e-mail, www page, or lotus notes platform.

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Lossy:

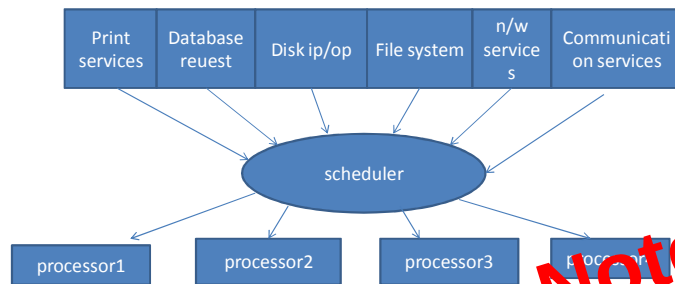
- Lossy compression means that it given a set of data will undergo a loss of accuracy or resolution after a cycle of compression and decompression. it is mainly used for voice, audio and video data.
- The two popular standards for lossy tech is MPEG, JPEG.

Lossless:

- Lossless compression produces compressed output that is same as the input. It is mainly used for text and numerical data.

Lecture 1

Symmetric Multiprocessing



Multimedia Server:

- A server is h/w & s/w systems that turns raw data into usable information and provide that to users when they needed.
- E-commerce application will require a server to manage application tasks, storage, security, transaction management and scalability.

To manage multimedia information we need the following.

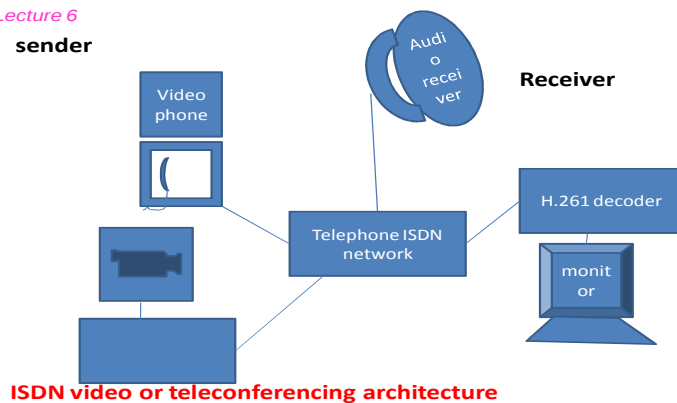
Multiprocessing:

- Current execution of several tasks on multiple processors. this implies that the ability to use more than one CPU for executing programs. processors can be tightly or loosely coupled.

Symmetric multiprocessing:

Lecture 6

sender



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Using the Internet for Video Conferencing:

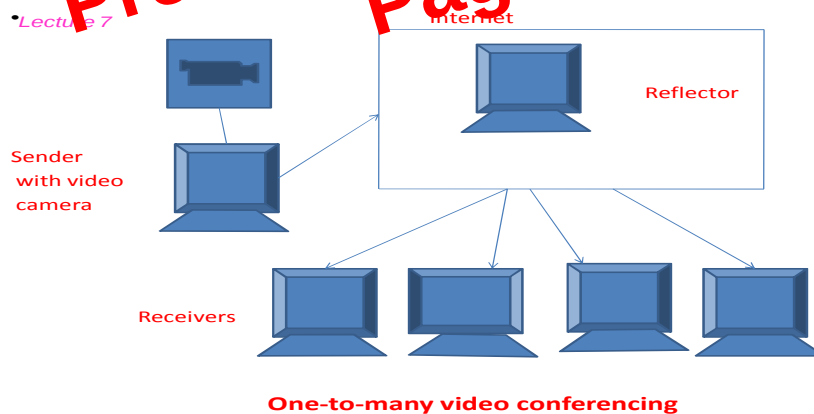
- The two video conferencing programs are available on the internet:

1. CU- See Me
2. MBONE

CU- See Me:

- CU- See Me is the first software available for the Macintosh to support real-time multiparty video conferencing on the internet.
- CU- See Me provides a one-to-one, one-to-many, several-to-several and several-to-many conferencing depending on the user's needs with minimal cost.

Lecture 7



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MBONE:

- It is a virtual network built on top of the Internet
- Invented by Van Jacobson, Steve Dearing and Stephen Caner in 1992.